GRV 020090

Lherzolite

7.54 grams

Introduction

Russell et al. (2005) report that the 2002-2003 Chinese expedition to Antarctica returned with 4448 meteorites, including another Martian meteorite labeled Grove Mountains 020090. It had a nearly complete fusion crust.

Russell et al. (2005) state that it is unlikely to be "paired" with GRV 99027, "because of differences in texture and mineral chemistry."

Petrography

GRV 02009 consists of two parts: poikilitic and interstitial areas. The poilititic texture is composed of several large pyroxene oikocrysts, each with a pigeonite core and a thick augite rim and enclosing olivine and chromite grains. The interstitial area consist of olivine, pigeonite and maskelynite, with accessory laths of merrillite coexisting with maskelynite.

Magmatic melt inclusions are found in olivine and pyroxene.

Mineral Chemistry

Olivine: Olivine is Fo_{70-60}.

Pyroxenes: Pigeonite is zoned $En_{60-72}Fs_{24-29}Wo_{3-14}$. Augite is $En_{47-52}Fs_{16-19}Wo_{31-36}$.

Maskelynite: Shocked plagioclase is $An_{37-57}Ab_{41-58}Or_{1-6}$.